



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/799,437

03/12/2004

Jorg-Reinhardt Kropp

16274.9a.1

6223

22913

7590

09/10/2008

WORKMAN NYDEGGER  
60 EAST SOUTH TEMPLE  
1000 EAGLE GATE TOWER  
SALT LAKE CITY, UT 84111

EXAMINER

CHIEM, DINH D

ART UNIT

PAPER NUMBER

2883

MAIL DATE

DELIVERY MODE

09/10/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/799,437	<b>Applicant(s)</b> KROPP, JORG-REINHARDT	
	<b>Examiner</b> ERIN D. CHIEM	<b>Art Unit</b> 2883	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 15-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 15-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

Claims 1 and 23 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In this case the claimed limitation of:

”an associated optical system that includes a lens formed in a second side of the substrate, wherein the lens is unique to the subassembly”

Is consider new matter by the examiner because none of the drawings on record shows a lens being formed "in a second side of the substrate". The closest drawing on record is Figure 1 wherein the lens '7' is clearly not in the substrate '2'. Further the Specification (Paragraph [0017]) only mentions that the microlens of the “subassemblies” is formed on or in the substrate, which means that the microlens (1) must part of the subassembly and (2) the microlens is on the same side of the subassembly. On the contrary, Claim 1 clearly indicates that the lens is “unique to the subassembly” and is formed on “second side of the substrate”. Hence the examiner has not found any support for the newly amended subject matter within the Specification. For examining purpose the examiner will conduct search and interruption that the lens is formed in the substrate as claimed in Claim 1.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-13, 15, and 18-26 are rejected under 35 U.S.C. 102 (b) as being unpatentable by Nosu ET al. (US 4, 244, 045) in view of Naganuma (US 6,515,766).

Regarding claims 1-3, 18-26 Nosu teaches an optical multiplexer and demultiplexer for multiplexing or demultiplexing optical signals having a plurality of wavelengths, the arrangement comprising a multiplex body (Fig. 12; 60 is a monolithic transparent body) having first and second parallel surfaces (60) between which light is reflected back and forth and coupled in or out in a wavelength dependent manner (please follow the arrows designating the directionality of light), a plurality of subassemblies (41-45), each subassembly comprising an optoelectronic transducer (Fig. 9; 131-135 and col. 5, lines 29-31) and an associated optical system that includes a lens (40) aligned at an oblique angle relative to the second surface; and a plurality of wavelength selective filters, each filter being mounted between the second surface and a corresponding subassembly of the plurality of subassemblies (11, 13, 15, 12, 14, 16). Furthermore, Nosu discloses an optoelectronic transducer supported by the substrate (131, 132, 133, 134, 135), and an associated optical system that includes a lens attached to the substrate, wherein the lens is unique to the subassembly (122, 123, 124, 125). Nosu does not teach

Art Unit: 2883

wherein an associated optical system that includes a lens formed in a second side of the substrate. Naganuma does teach an optical system wherein the lens '36' is position on a second side and is formed in a substrate (See Figure 1 '36') for the purposes of reducing loss. A motivation for such an application would to adjust the focal length of the lens relative to the subassembly hence this would make the optical transmission more efficient. The motivation can be found within the prior art of Naganuma details how insertion loss is suppressed (Col 8 [20-30]). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to apply the teachings of Naganuma to the device of Nosu in order to reduce optical insertion loss.

Regarding claim 3, Nosu teaches each subassembly is mechanically connected to the multiplex body; they are mechanically adhering to the body during manufacturing.

Regarding claims 4-9, Nosu teaches providing means to place the subassemblies at an angular orientation with respect to the second surface of the multiplex body (81-86). These spacers are prisms, which further provide optical functionality to the arrangement. The second surface on which the prisms are place upon are glass plates (31-36).

Regarding claims 10-14, Nosu provided thin film bandpass filters (11-16) placed on glass plates (21-26), these bandpass filters reflects non-centered wavelengths (col. 6, line 67 to col. 7, line 2).

Regarding claim 15, in Fig. 17, Nosu teaches elements 41-46 are graded index rod lens for collimating the optical signals from the fibers.

Regarding claims 18-22, Nosu teaches the subassemblies are structurally identical designed for receptions and transmissions, furthermore, the subassemblies taught by Nosu allows

Art Unit: 2883

the device to operates as a demultiplexer and a multiplexer due to the bi-directionality of the optical paths.

Regarding claim 3, Nosu teaches each subassembly is mechanically connected to the multiplex body, they are mechanically adhering to the body during manufacturing.

Regarding claims 4-9, Nosu teaches providing means to place the subassemblies at an angular orientation with respect to the second surface of the multiplex body (81-86). These spacers are prisms, which further provide optical functionality to the arrangement. The second surface on which the prisms are place upon are glass plates (31-36).

Regarding claims 10-14, Nosu provided thin film bandpass filters (11-16) placed on glass plates (21-26), these bandpass filters reflects non-centered wavelengths (col. 6, line 67 to col. 7, line 2).

Regarding claim 15, in Fig. 17, Nosu teaches elements 41-46 are graded index rod lens for collimating the optical signals from the fibers.

Regarding claims 18-22, Nosu teaches the subassemblies are structurally identical designed for receptions and transmissions, furthermore, the subassemblies taught by Nosu allows the device to operates as a demultiplexer and a multiplexer due to the bi-directionality of the optical paths.

Regarding claim 24, Nosu teaches an optical multiplexer and demultiplexer for multiplexing or demultiplexing optical signals having a plurality of wavelengths, the arrangement comprising a multiplex body (Fig. 12; 60 is a monolithic transparent body) having first and second parallel surfaces (60) between which light is reflected back and forth and coupled in or out in a wavelength dependent manner (please follow the arrows designating the

Art Unit: 2883

directionality of light), a plurality of subassemblies (41-45), each subassembly comprising an optoelectronic transducer (Fig. 9; 131-135 and col. 5, lines 29-31) and an associated optical system that includes a lens (40) aligned at an oblique angle relative to the second surface; and a plurality of wavelength selective filters, each filter being mounted between the second surface and a corresponding subassembly of the plurality of subassemblies (11, 13, 15, 12, 14, 16). Each subassembly further including an associated optical system, each associated optical system defining an associated second optical axis that is aligned at the oblique angle relative to the second surface, the optical system comprising a lens formed on or in the substrate (41-46).

Claims 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nosu in view Naganuma further in view of Sasaki et al. (US 5,960,141).

Nosu teaches a mux/demux mounted on a substrate having a lens mounted to collimate the optical signal in a parallel manner to the receiving member of the mux/demux, having a transducer mounted on each subassembly.

However, Nosu does not teach the electronic transducer is mounted on a leadframe where in each assembly are at least partially encapsulated with a potting compound.

Sasaki discloses a leadframe that provides at least partially encapsulated potting compound to insulate the component mounted thereon (col. 7-8, lines 58-15) for the purpose of maintain an operational temperature for the device.

It would have been obvious at the time the invention to recognize although Nosu does not explicitly disclose a leadframe but since the transducer is disclosed to be mounted on the subassembly, the subassembly inherently further comprises a leadframe to which electrical connections are made for the transducer to operate. Therefore, the teaching of Sasaki is to

Art Unit: 2883

supply the deficiency of a potting compound used to protect the transducers being mounted individually on each subassembly since the teaching of the potting compound applied on top of a transducer to seal the transducer to the substrate can be applied Nosu from overheating and further protecting the mounting of each transducer to each subassembly since once the potting compound dries it forms a clear and hard protective surface over the transducer sealing the transducer between the potting compound and the subassembly.

### ***Response to Arguments***

Applicant's arguments with respect to claim 1 and 23 have been considered but are moot in view of the new ground(s) of rejection. Applicant has submitted newly amended limitations of which were considered and made of record. The newly amended limitations have been rejected under 112 first paragraphs as to contain new subject matter of which is not supported by the Specification. The detail of the rejection is outlined above. However, for the purposes of examining the examiner has considered the newly amended claims in the new grounds of rejection under 35 USC 103(a) as detailed above over the prior art of Nosu in view of Naganuma.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO



Art Unit: 2883

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ERIN D. CHIEM whose telephone number is (571)272-3102. The examiner can normally be reached on Monday - Thursday 9AM - 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Erin D Chiem/  
Examiner, Art Unit 2883

/Frank G Font/  
Supervisory Patent Examiner, Art Unit 2883